



Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2002	2CPXL08.8HSX	8.8	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module			Loader, Tractor, Dozer and Motor Grader	
ENGINE MODELS (rated power in kilowatts, kw)	See attachment			

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ KW < 225	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		FEL	N/A	6.0	N/A	N/A	N/A	N/A	N/A	N/A
		CERT	0.3	5.0	N/A	1.0	0.15	7	1	15

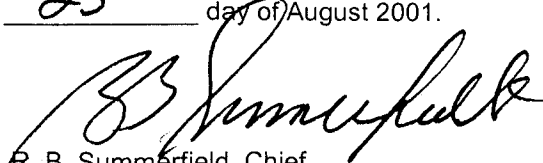
BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 23rd day of August 2001.


B. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Model Summary Form

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 2CPXL08.8HSX
Mfr Family Name: NA
Process Code: New Submission

U-R-001-0171

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
Note: Peak HP and Peak Torque								
1 - Cert Engine	C-9	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
2	C-9	345 @ 2200	257. 164	121.1	1134 @ 1400	218	102.8	EM, DI, TC, ECM,
3	C-9	209 @ 2000	110	73.2	767 @ 1300	156	68.2	EM, DI, TC, ECM,
4	C-9	276 @ 1800	157	94.3	943 @ 1400	187	87.1	EM, DI, TC, ECM,
5	C-9	274 @ 2200	134	98.3	882 @ 1400	169	78.5	EM, DI, TC, ECM,
6	C-9	299 @ 2200	143	105.9	995 @ 1200	191	76.3	EM, DI, TC, ECM,
7	C-9	229 @ 2000	123	81.8	806 @ 1300	166	71.8	EM, DI, TC, ECM,
8	C-9	195 @ 2000	106	70.8	745 @ 1000	142	47.2	EM, DI, TC, ECM,
9	C-9	228 @ 2100	117	81.9	810 @ 1400	155	72.4	EM, DI, TC, ECM,
10	C-9	300 @ 2200	145	106.5	1065 @ 1400	201	93.6	EM, DI, TC, ECM,
11	C-9	189 @ 2200	103	68.5	695 @ 1300	144	62.1	EM, DI, TC, ECM,
12	C-9	275 @ 2200	133	97.7	904 @ 1400	175	93.6	EM, DI, TC, ECM,
13	C-9	300 @ 2200	144	105.6	985 @ 1400	189	81.6	EM, DI, TC, ECM,
14	C-9	264 @ 1800	148	88.4	902 @ 1400	176	82.1	EM, DI, TC, ECM,
15	C-9	299 @ 2200	143	105.0	995 @ 1200	191	76.3	EM, DI, TC, ECM,
16	C-9	251 @ 2100	125	88.0	890 @ 1400	170	79.2	EM, DI, TC, ECM,
	C-9	284 @ 2100	145	101.1	1010 @ 1400	128	89.6	EM, DI, TC, ECM,

*1 - This engine model C-9 ^{power} at 2200 rpm is just certification engine and not offer to sell in California.